

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To: ANDREW V. SMITH FOTONATION 800 AIRPORT BLVD. SUITE 522 BURLINGAME, CA 94010		Date of mailing (day/month/year) 24 JUN 2008
Applicant's or agent's file reference FN-196-PCT	FOR FURTHER ACTION See paragraphs 1 and 4 below	
International application No. PCT/US 08/55831	International filing date (day/month/year) 04 March 2008 (04.03.2008)	
Applicant FOTONATION VISION LIMITED		

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35

For more detailed instructions, see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US
 Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450, Alexandria, Virginia 22313-1450
 Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
 PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference FN-196-PCT	FOR FURTHER ACTION <div style="text-align: right;">see Form PCT/ISA/220 as well as, where applicable, item 5 below.</div>	
International application No. PCT/US 08/55831	International filing date (<i>day/month/year</i>) 04 March 2008 (04.03.2008)	(Earliest) Priority Date (<i>day/month/year</i>) 05 March 2007 (05.03.2007)
Applicant FOTONATION VISION LIMITED		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (see Box No. II).

3. ☐ Unity of invention is lacking (see Box No. III).

4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. _____
☐ as suggested by the applicant.
☐ as selected by this Authority, because the applicant failed to suggest a figure.
☐ as selected by this Authority, because this figure better characterizes the invention.
- b. ☒ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 08/55831

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H04M 3/42 (2008.04)

USPC - 455/415

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

USPC - 455/415

IPC(8) - H04M 3/42 (2008.04)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 455/415 (text delimited)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST (USPT, PGPB, EPAB, JPAB); google.com

Search Terms Used: facial, annotation, categorization, mobile, telephone, PDA, assistant, face, faces, library, database, crop, cropping, cropped, automatic, automatically, transmit, transmission

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0264780 A1 (Zhang et al.) 30 December 2004 (30.12.2004), entire document, especially Abstract; paras [0039]; [0044]; [0078]; [0082]-[0084]	1, 18
Y		2-17, 19-34
Y	US 2007/0011651 A1 (Wagner) 11 January 2007 (11.01.2007), entire document, especially Abstract; para [0013]	2-17, 19-34
Y	US 2004/0145660 A1 (Kusaka) 29 July 2004 (29.07.2004), entire document, especially para [0408]	13, 30
A	US 2006/0251292 A1 (Gokturk et al.) 09 November 2006 (09.11.2006), entire document	1-34
A	US 2006/0104488 A1 (Bazakos et al.) 18 May 2006 (18.05.2006), entire document	1-34
A	US 2006/0239515 A1 (Zhang et al.) 26 October 2006 (26.10.2006), entire document, especially Abstract	1-34
A	US 6,389,161 B2 (Shaffer et al.) 14 May 2002 (14.05.2002), entire document, especially Abstract	1-34

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

28 May 2008 (28.05.2008)

Date of mailing of the international search report

24 JUN 2008

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
ANDREW V. SMITH
FOTONATION
800 AIRPORT BLVD.
SUITE 522
BURLINGAME, CA 94010

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

24 JUN 2008

Applicant's or agent's file reference
FN-196-PCT

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US 08/55831

International filing date (day/month/year)

04 March 2008 (04.03.2008)

Priority date (day/month/year)

05 March 2007 (05.03.2007)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - H04M 3/42 (2008.04)

USPC - 455/415

Applicant FOTONATION VISION LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1b(i)(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion

28 May 2008 (28.05.2008)

Authorized officer:

Lee W. Young

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 08/55831

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:
- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))
3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, this opinion has been established on the basis of:
- a. type of material
- ☐ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☐ on paper
- ☐ in electronic form
- c. time of filing/furnishing
- ☐ contained in the international application as filed
- ☐ filed together with the international application in electronic form
- ☐ furnished subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US 08/55831

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	2-17, 19-34	YES
	Claims	1, 18	NO
Inventive step (IS)	Claims	none	YES
	Claims	1-34	NO
Industrial applicability (IA)	Claims	1-34	YES
	Claims	none	NO

2. Citations and explanations:

Claims 1 and 18 lack novelty under PCT Article 33(2) as being anticipated by US 2004/0264780 A1 to Zhang et al. (hereinafter "Zhang").

As per claims 1 and 18, Zhang discloses a method of face categorization and annotation of a face image library, comprising: (a) acquiring with a digital image acquisition device a digital image of a scene that includes a face (para [0082]); (b) automatically cropping the face or removing one or more non-facial items from the digital image, or both, and thereby generating a full-size face image (para [0082]; [0083]); and (c) storing the full-size face image with other indicia identifying a person corresponding to the face in a face image library (Abstract; para [0084]).

Claims 2-12, 14-17, 19-29, and 31- 34 lack an inventive step under PCT Article 33(3) as being obvious over Zhang in view of US 2007/0011651 A1 (Wagner).

As per claims 2 and 19, Zhang does not disclose the method of claim 1 and the computer readable media of claim 18, wherein the face image library comprises an address book or a contact list, or both, of a mobile camera phone or other handheld device. Wagner discloses the face image library comprises an address book or a contact list, or both, of a mobile camera phone or other handheld camera device (para [0013]). It would have been obvious to one of ordinary skill in the art to combine the system of Zhang with the mobile device of Wagner because this allows a more complete address book for mobile devices which helps connect faces with names.

As per claims 3 and 20, Zhang discloses the method of claim 2 and the computer readable media of claim 19, wherein the method further comprises acquiring a series of preview images and extracting candidate face regions from successive frames (para [0082]; [0083]).

As per claims 4 and 21, Zhang discloses the method of claim 3 and the computer readable media of claim 20, wherein the method further comprises maintaining location data and a cumulative confidence level that the candidate face region comprises a face, and based on information from the series of preview images, determining that said face present within said digital image (para [0078]).

As per claims 5 and 22, Wagner discloses the method of claim 2 and the computer readable media of claim 19, wherein the method further comprises receiving manual input of further information relating to the face for storing with the full-size face image (para [0013]).

As per claims 6 and 23, Wagner discloses the method of claim 2 and the computer readable media of claim 19, wherein the method further comprises receiving said other indicia manually by a user of the digital image acquisition device (para [0013]).

As per claims 7 and 24, Zhang discloses the method of claim 6 and the computer readable media of claim 23, wherein the method further comprises displaying the face and prompting the user to associate the face with the identifying indicia (para [0039]; [0044]).

As per claims 8 and 25, neither Zhang nor Wagner specifically discloses the method of claim 7 and the computer readable media of claim 19, wherein the method further comprises displaying a list of probable members of a contact list and receiving a selection from the list by the user. However, predictive models were known in the art for generating a list of probable matches. Therefore, it would have been obvious to one of ordinary skill in the art to display a list of probable members because this allows the user to ensure an accurate match.

As per claims 9 and 26, Zhang discloses the method of claim 2 and the computer readable media of claim 19, wherein the generating of the full-size face image further comprises building a whole face from two or more partial face images (para [0082]).

As per claims 10 and 27, Zhang discloses the method of claim 2 and the computer readable media of claim 19, wherein the generating of the full-size face image further comprises brightening a poorly illuminated face, or rotating a rotated or tilted face, or combinations thereof (para [0044]).

As per claims 11 and 28, neither Zhang nor Wagner specifically discloses the method of claim 2 and the computer readable media of claim 19, wherein the generating of the full-size face image further comprises correcting a red-eye, white eye or golden eye defect, or combinations thereof. However, Zhang discloses the correction of photograph errors (para [0044]). Therefore, it would have been obvious to one of ordinary skill in the art to correct such errors because such are the most common errors in photography and the easiest to fix and increase the quality of the resulting image. Further, image retouching is known in the art for modifying images.

(see continuation of citations and explanations in first supplemental box)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US 08/55831

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box No. V(2) – citations and explanations

As per claims 12 and 29, Zhang discloses the method of claim 2 and the computer readable media of claim 19, wherein the generating of the full-size face image further comprises correcting a photographic blemish artifact within the face of the digital image (para [0044]).

As per claims 14 and 31, Wagner discloses the method of claim 2 and the computer readable media of claim 19, wherein the method further comprises associating said person with an external device or service or both, and automatically transmitting said digital image to the external device or service or both (para [0013]).

As per claims 15 and 32, Zhang discloses the method of claim 2 and the computer readable media of claim 19, wherein the method further comprises receiving manual selection of a level of cropping of the face from the digital image (para [0039]; [0044]).

As per claims 16 and 33, neither Zhang nor Wagner specifically discloses the method of claim 2 and the computer readable media of claim 19, wherein the method further comprises adding a smile or open eye or other partial face portion, or combinations thereof, from one or more stored facial images of said same person. However, Zhang disclose correcting errors within the image to extract data from it (para [0044]). Therefore, it would have been obvious to one of ordinary skill in the art to correct undesired image features because this would result in the most appealing final image. Further, image retouching is known in the art for modifying images.

As per claims 17 and 34, Zhang discloses the method of claim 2 and the computer readable media of claim 19, wherein the method further comprises applying face recognition to the face based on a library of known face images (Abstract; para [0084]).

Claims 13 and 30 lack an inventive step under PCT Article 33(3) as being obvious over Zheng in view of Wagner and further in view of US 2004/0145660 A1 (Kuseka)

As per claims 13 and 30, neither Zhang nor Wagner specifically discloses the method of claim 2 and the computer readable media of claim 19, wherein the method further comprises automatically transmitting the digital image to one or more persons identified within the image or to a user of the digital image acquisition device, or both. However, Kusaka discloses automatically transmitting the digital image to one or more persons identified within the image or to a user of the digital image acquisition device, or both (para [0408]). It would have been obvious to one of ordinary skill in the art to use the automatic transmission, as taught by Kusaka, in the method, as taught by Zhang in view of Wagner, to allow the use to receive images of personal interest to the user, even if the user is not aware of the image.

Claims 1-34 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.